

VALEDICTORY,

DELIVERED AT THE COMMENCEMENT

OF THE

MEDICAL DEPARTMENT

OF

GEORGETOWN COLLEGE,

BY

MONTGOMERY JOHNS, M. D.,

Professor of Anatomy.

MARCH 3, 1862.

WASHINGTON, D. C.

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CORRESPONDENCE.

WASHINGTON, D. C., *March 3, 1862.*

MONTGOMERY JOHNS, M. D.:

DEAR SIR: Appreciating the sound and practical sentiments embodied in your excellent Valedictory, delivered at the Commencement of the Medical Department of Georgetown College on the 3d instant, we respectfully solicit a copy of the same for publication.

We have the honor to be, sir,

Respectfully, yours,

J. A. CHAMBERLIN, }
H. E. WOODBURY, } *Committee.*
R. S. L. WALSH, }

MONDAY EVENING, *March 3, 1862.*

GENTLEMEN: Your communication, requesting for publication the Oration delivered in your hearing this afternoon, forbids my pleading haste as a reason for declining to comply with your wishes. When you know that the major part of the Address was written since our lectures terminated, you will understand the extreme reluctance I feel, in presenting for publication a manuscript, every page of which must give evidence of the haste under which it was planned, and of the pressure of other occupations amid which it was executed.

Yours, very truly and sincerely,

MONTGOMERY JOHNS, M. D.

MESSRS. J. A. CHAMBERLIN, H. E. WOODBURY, R. S. L. WALSH, L. W. RITCHIE, H. H. LOWRIE, A. B. SHECKELL, D. KOLB, C. ELLET, S. S. TURNER, C. BARBOUR, C. W. PECK, F. RICHARDS.

ADDRESS.

Being here to day, gentlemen of the Medical Class of the Georgetown College, on the part of my associates in this Faculty, to unite with them in conferring upon your classmates, who have under our guidance completed the assigned curriculum of collegiate professional study, the title and privileges accorded to the successful applicant for admission to the ranks of the Medical profession—it seems most proper to ask you to take with me a retrospective glance, backward along the occupations of the past winter, and of those preceeding months or years which you have devoted to professional study; allow me further to sketch (even if necessarily hastily) a general outline of the aims and objects of the profession you (who receive the degree of Doctor of Medicine to day) are about to engage in, and to which all of you look forward; what that profession is, both in relation to the physician himself and to the community who employ his knowledge, and time and zeal, who sustain him by their approval, and sympathy, and friendly offices, as well as by their liberal and justly earned monetary return for his assistance; assistance rendered in their hours of pain and anxious watchfulness; how is the study of this profession to be pursued? and what are the ends it is capable of attaining? The public position tacitly accorded to the competent and conscientious physician in every enlightened community, the disgrace attached to him who falls short of the intellectual or moral qualifications demanded of every aspirant for success in the practice of Medicine, the scorn expressed in the homely term, quack, the heartily rendered sympathy and posthumous honors given alike to the surviving families and endeared memory of the good physician when death interrupts his daily ministrations of gentleness and kindness, his constant employment of painfully obtained experience and knowledge and skill, his hourly exercise of patience and sympathy with human feebleness, and of large and liberal charity, the daily life of that man who has honorably attained to a fair position in our profession, the posthumous honors of those whom appreciating communities love to recall with affectionate and tender regret; the copious special literature belonging to our art—itself a proof of the industry and patience, and learning, and enthusiasm and devotion to the best interests of our race, of those whose writings constitute our professional

classics, the acknowledged value and public utility of discoveries made by your brethren; the large number of those young men who annually throng the lecture rooms of the Medical schools in this country and in Europe—the presence of those friends who have honored us this evening with their attendance, thus expressing their sympathy with our efforts and their approval of your devotion of your time, your minds and hearts, your hopes, energies and character to this pursuit; these all, if any one singly were not amply sufficient, certainly fully establish a demonstration that you are embarked in a pursuit which, when properly exercised, is certainly one of the most useful and honorable among the occupations of man.

Pardon the speaker, gentlemen, when he ventures here to speak briefly of himself. It is only eleven years since I sat like many of yourselves, for the first time a young student of Medicine, an auditor and spectator on an occasion similar to the present one, when a portion of my class-fellows were to receive the rewards of diligent preparatory Medical study, and to be dignified with the honorable title *Medicinæ Doctor*: well do I remember how my own heart was beating with bright hopes, and filled with warm enthusiasm as the orator of the occasion, the then Professor of Anatomy, discoursed upon the certitudes of our science, and warned his admiring auditors (those now scattered pupils who received from him those lessons and acquired from him that fondness for the study of his special branch, Anatomy and Physiology, which, to the speaker at least, has been its own exceeding great reward,)—as the orator of that day urged upon us a hearty belief in the ascertained truths of Medical science, and warned us against scepticism in Medical opinion, that opiate to all diligent intellectual activity and slow paralyzer of all philosophical energy, my own hopes and aspirations advanced not indeed to this decade of years, which should find the tongue of that eloquent teacher silent in death, that hand then so marvelously skillful to wield the scalpel in rapid, and beautiful and masterly dissections, now lying motionless and idle in the narrow house in a city of the dead; still less was the panorama of the future so far unrolled before me, as to reveal the then hopeful student, as your present teacher and the orator of this commencement evening.

And if, gentlemen, with pride I recall these associations, and venture to utter in your hearing the voice of eulogy upon an eminent and beloved teacher in a sister school of Medicine, this sentiment of pride is not unmingled with a feeling of diffidence, when memory summons from the past the voice and gesture, the glance, manner, and utterance of the late Professor Joseph Roby.

Nor should this sense of personal disparagement be lessened if I remind you of the important subjects which during the past

winter have engaged your attention, nearly all of which (if not all) are intimately dependent upon the clearness and forcibleness with which you have grasped the truths of anatomical science, for their highest value to you.

Nevertheless, if in our past almost daily association, the speaker has succeeded in exciting within you a spark of that love kindled in his own breast by a venerated teacher, for the honorable occupation which you have chosen as the business of your lives; if the speaker and his brother professors in this School of Medicine have been able to lead you to realize that the study of Medicine, rightly pursued and understood, embraces a far wider range, and has a deeper interest than almost any other human pursuit, I shall feel, we who have assumed relations to you of teachers in our respective chairs, have not expended our labor in vain.

You, gentlemen, who this day have received the assurance of our satisfaction as to your faithfulness and success as students, by your recent final examinations in the several branches of Medical science taught in this school, you cannot avoid regarding with seriousness the responsibilities which, as young physicians, you are nevertheless anxious to undertake. In every pursuit, but especially in Medicine, a love for your profession is one of the chief requisites for professional success. As a profound critic and philosopher has said of the great ornament of the English Drama, it is necessary to *reverence* Shakspeare, before it is possible fully to appreciate this unrivalled poet; so in like manner it is indispensable you should love your profession, and appreciate its dignity and utility, before you can succeed in it. I believe, gentlemen, you do start, on this the commencement of your professional life, with an intelligent sense of your duty to yourselves and to your friends, and to the generation amid and for which your allotment of man's brief life may permit you to labor in an arduous profession. Your tried patience and industry, and attention in the lecture room and elsewhere to every means of self-improvement within your reach—these things assure me you mean to cultivate to the best of your ability the talents God has given you. If we have met you, gentlemen, from day to day in the lecture room with calmness and hopefulness that we were really being useful to you, this assurance in the mind of him who now addresses you was most founded upon the attentiveness and patience and evident desire to learn discoverable in you as pupils, rather than upon any special tact or talent in your teacher.

Last fall, at the opening of our session, doubtless those of you, my hearers, who attended medical lectures for the first time, were somewhat confused and discouraged amid the seeming multiplicity of the various subjects, all brought to your notice at once, and some for the first time; an almost new technical language was to be acquired; the golden thread of practical value upon

which Experience hangs the pearls of Medical truth, uniting them into a beautiful and intelligible form, was not then perceptible to your undisciplined vision; you seemed to yourselves rather to be undertaking to study at *one* and the *same time*, (not the *science of Medicine*,) but several separate and remotely related sciences, as the claims of the therapeutist and chemist, anatomist and physiologist were brought before you, or when the professors of applied medicine bid you study surgery and practice, hygiene, and that branch of our art where the written experience of Boivan and Lachapelle, Weigand and Nagele, Churchill and the elder Meigs must be your guides, until practice shall have given you that wisdom better than the learning contained in books.

Now, however, gentlemen, having completed a winter's course of study, this confusion has vanished, and you can see the relations and intimate association of what then seemed to you disconnected and incapable of being united into a coherent unity. The instructions of your professor of chemistry have enabled you to grasp the meaning and reasoning of your teacher of therapeutics; a lecture on practice has been clearer to you, the doctrines of Chelius and Meigs have been intelligible to you, just in proportion to your acquaintance with the facts of the anatomist or with the reasonings of the physiologist. If you will permit me to use the word *pueris* instead of our technical term *cadaver*, you have learned that skill and patience and knowledge must guide the scalpel of the anatomist; you have learned then, (for I mean to quote old Ovid in a sense he never dreamed of,)

“Maxima reverentia pueris.....debeter.”

Using the word *puer*, then, in this new and technical sense, you have learned to value and think reverently of even the most repulsive means of professional instruction, and you hardly wonder that the title anatomist is nearly synonymous with enthusiast in this speciality.

Nor have you gained knowledge only; your senses have acquired a special education, and your intellects have gained in mental power and discipline. To study Medicine rightly, inevitably develops the intellectual faculties of the individual. A subtle logic belongs to chemistry, and therapeutics and practice; memory is taxed heavily by lessons in anatomy and materia medica, and the judgment is daily called upon as you study surgery and applied medicine. You have gained, then, not only knowledge, but greater mental power to make further additions to your stores of professional learning; not only is the path less beset with difficulty, but your mental strength to overcome difficulty is greatly increased. The biographer of the celebrated Dupuytren tells us, that early in life, this distinguished surgeon determined to excel in this special department. Daily practice as a demon-

strator, untiring devotion to self-improvement, at last enabled him to operate daily, 5 hours per day, in the Hotel Dieu, before 400 spectators, with that wonderful coolness and seeming want of human tenderness, never relaxing from his icy coldness, from that hauteur which are suggested at every mention of his name; framing those so faultless sentences to be found in his *Leçons Orales*, his oratory as faultless and as polished and direct, as his knife. His museum of pathological anatomy (established by his will) is another evidence of a mind seemingly too well balanced and calm to be swayed by any special predilection, yet devoted with its entire energy to one favorite pursuit. To Dupuytren, I doubt not, his unrivalled surgical skill, his power and clearness as an orator, his success as a pathological collector, constituted the great, the chief element of happiness. He valued our profession, devoted himself heartily to it, was firm in his early self-resolve, and attained fully to the summit of professional success, in an era graced by the highest cotemporary excellence.

Nor is this a solitary instance gleaned from the treasures of medical biography. Read carefully the lives of Sydenham, Hunter, Home, Cullen, Jenner, Bell, the Coopers, of the elder and younger Munro, in the British schools, and the same relations between effect and cause are discoverable. Laennec, Andral, Louis, Bichat, Cuvier, Daubenton, and Cruveilhier, all attained to usefulness and professional distinction in the same way. Professional distinction was calmly contemplated in early manhood; the aim was judged worthy of patient and well-planned effort; knowledge and skill were recognized as essential conditions to success; the goal was kept ever in view, and the later years of life repaid the assiduous devotion of the hours of earlier manhood to the duties of our profession. As the most thoughtful and graceful of American poets has told us, his own high position as a polite scholar and learned linguist, adding additional force to his words:

The heights by great men, reached and kept,
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the Night.

I know not an instance of eminent professional distinction recorded by the medical biographer, where knowledge and patience, courage and steady devotion to one well-chosen aim, are not acknowledged as the necessary conditions of after eminence.

In our profession, as in all human pursuits, chance enters certainly as an element; there is, no doubt, to the young physician, as to other men, a tide, which, taken at its flood, may enable the skillful mariner to go on to fortune and to fame; but all history and biography assure us that it was neither ignorance, nor shallow learning, nor vacillating conduct, nor self-distrust, which

placed the Hunters and Bells, and Coopers and Cruvelhiers of a former day foremost among their cotemporaries, and immovably enshrined in the admiration and reverence of succeeding ages. Is the anatomy of Galen an evidence of his want of diligence, or does it demonstrate irrefutably we must recognize him as a medical sceptic, undervaluing our art? Do not the writings of Baglivi and of Lallemand, and of Andeal evince the same character of *patient* observation of disease which distinguishes so remarkably the sententious histories embalmed in the classic language of Hippocrates? If you have ventured to doubt whether John Hunter's seeming love for medicine was a real love, has not the doubt seemed almost unreasonable, when you have finished the celebrated Treatise on the Blood, or his Treatise on Human Teeth, or when you have scanned the rich catalogue of the Hunterian Museum, copious even at the time of his death?

Believe me, gentlemen, these men were learned, and patient, diligent and heartily in earnest, and therefore chiefly were they able to convert accident and occasion into means of personal advancement.

Mere talent, or taste, or genius (if this latter word is anything more than a mere synonyme for industry) are not sufficient to secure distinction in your professional career.

The traveller, in sailing upon the beautiful river of the north, the Hudson, seems often so shut in by the surrounding hills, as to see no open channel for his continued progress: yet the pilot finds a ready way amid the embracing shores; ever a way opens among the hills for him who advances, and difficulties seem always greater at a distance than when fairly met. As you come into the great aortic avenue of our Metropolis from any less crowded street, and look up and down that vast thronging multitude, ever moving upon the busy way, *your own path* is by no means a plain and untrodden way. Yet you quietly and unhesitatingly continue your progress, and without difficulty thread your way with comfort and pleasure along the busy street. This is no unapt emblem, young gentlemen, of the mode in which the path of professional life will open itself before you, as you quietly wend your way in the discharge of professional duty. The ranks of competent Medical men are full, even crowded; but like the crowded street, the throng of cotemporary physicians will unknowingly make way *for you*; here, you will meet a recognizing friend; there, a subject of your envy or of your pity, or kindly charity; and at your journey's termination, you will see more clearly, even, the strict truthfulness of our comparison.

Liebig, likening the action of certain animal poisons to ferment, has coined for us the word zymotic, (zume, yeast;) you will recognize that just as the acquisition of one branch of Medical study has opened the way for that of others, and as, in study,

you notice the improvement of your powers, and the comparative ease with which you now pursue the acquisition of new branches of Medical knowledge; so in practice (regarded as a business only) you will recognize a zymotic influence, by which each increment to your business and skill will make it easier to add other names to your patient roll, easier to approach each new case with a modest and manly self-confidence, easier to create and sustain and enlarge that social recognition of your position, as educated and competent young physicians, upon which your professional reputation will be based.

Now gentlemen (and I can say it with all sincerity) even in the hearing of these my seniors in this faculty, we will act more wisely in *constantly remembering* that we are young physicians, that in even for one hour forgetting this undeniable truth.

To forget this, or to act as if we had forgotten it, will be to place us in a false position, often in an equivocal one, sometimes in an awkward one, and always in one of uncomfortableness. But, if the statement does not seem in its very occasion self-contradictory, you do not need more than a word of caution on this point, for young physicians really masters of the elements of Medical learning, are seldom wanting in proper modesty and right appreciation of that superior skill and tact which we are taught is only to be gained by long experience. He that values the written experience of a Sydenham, can hardly undervalue the living, though unwritten experience of cotemporaries many years disciplined by daily observation of the relations between disease and remedy.

Boerhaave tells us "without his own experience, no man is a real disciple in any branch of natural knowledge," and, gentlemen, how especially is this true of Medical experience! If in Chemistry, or Anatomy, in Pathology or Physiology, you are equal to many of your seniors, or even superior to some in these *auxilia artis medendi*, still we must confess our inferiority in experience to those who reckon experience by years, where we can hardly reckon by months. It is often said in late years, Medical science has made great advances. Now, admitting (to avoid the trouble of controverting a by no means self-evident dictum) the truth of this statement, we may very profitably ask what is the present position of medicine, both as a science and as an art; in what way does Medical biography teach us it may be most profitably studied; when tested by the exact method of statistical enumeration, what has been undeniably established as the relation which the application of remedies bears to disease?

Has Medicine as a science attained to the exactitude of mathematics? I incline to say it has not. Perhaps such perfectness is impossible in the very nature of things. If the results of Medical experiments are not capable of the same demonstrative

proof, there is the necessity of even a stricter logic in Medical reasoning, than in mathematical; and it may not be unprofitable here to examine some of the reasons of the imperfection of our science, and of the slow progress it has made.

A careful perusal of the History of Medical opinions will satisfy you, I feel assured, that in every era, those who have sought to perfect the theory and the practice of our art, have found much in each to undo, especially in the formation and expression of a rational Medical philosophy. The instance of the success attending the establishment of the once so widely received Brunonian doctrines, is not a solitary one; among the many who have widely influenced the Medical opinions of their cotemporaries, it is not of Brown alone true that splendid genius and plausible eloquence have existed in minds destitute of philosophical sagacity: the respective systems of Cullen, Broussais, Rasori, and others, should teach us at least, who have lived to see these once revered systematisers numbered among the errorists of the past, the important lesson, that mere genius and eloquence, if misdirected, may tend to propagate error rather than to confirm or discover Medical truth. Contrast with the writings of these system builders, the laboriously collected clinical observations of Louis, Andral, Laennec, Grissolle, or of the patient and philosophical Abercrombie, and you will be convinced, that it is only by adhering rigorously to the positive method of the French and English numerical school, that reliable Medical philosophy can ever be reached. By this pains-taking, but cautious collocation and comparison of clinical observation, a mode of investigation where the co-operation of the therapeutist and pathologist, the chemist, physiologist and morbid anatomist are all demanded, we may expect in years to come, a solid body of Medical opinion will be elicited. How different this mode of study from that of years gone by; in which gifted men like Brown and Broussais seem almost to have wasted the powers of intellect of the highest order in profound reasoning upon mere speculation. Ignoring the necessity of the widest clinical study to afford a basis for their reasonings, it is not too much to say, the Medical philosophy, the principles of medicine as taught by these talented men, were in too many instances founded not on observation of disease, but in the delusive fancies of highly ingenious men. Yet even in the writings of these systematists, e. g. in the celebrated Treatise of Broussais upon Chronic Phlegmasiæ, you will perceive that much exact information as to pathological action and the effect of remedies, has been acquired. We recommend to you, therefore, with these cautions, the professional literature bequeathed to us by the industry of the past. A close and profound study of the recorded facts and experience of our predecessors, and the daily habit of observing diseased and healthy vital

actions for yourselves, will secure to you the ascertainable truths of pathological and therapeutical science. So taught, your diagnosis will assume a high degree of philosophic certainty, and your treatment will become, more and more, characterized by that rational empiricism, towards which modern medicine is surely, though slowly advancing. Be content then honestly to observe nature. Bring to such clinical observation reasoning powers disciplined aright, by that sort of vigorous study demanded in the effort to master the Principles of Medicine. Believe me, young gentlemen, treatment is not a mere matter of unreasoning routine, nor is diagnosis the mere recognition of phenomena, rendered easily recognizable by previous familiarity with similar groupings of symptoms. In your daily duties as practising physicians you will early see the occasion for, and the necessity of, a well disciplined reasoning power. If you mean then to grow wise by your daily clinical experience, it seems clear you must become habituated to weigh carefully, with unprejudiced minds, the results of well conducted and accurate observation. Baglivi said years ago—

Tota ars medicinae sita est in observationibus.

Against the tendency to premature generalization, Lord Bacon wisely warns the philosophical inquirer. These cautions bear most closely upon the methods of study by which the science of medicine is to be advanced.

Our profession requires a wider field of observation and of experience than any other of the mixed physical sciences, because it rests upon so many collateral branches of physical inquiry. This collateral knowledge must previously be acquired and thoroughly digested before the mind of the searcher for a sound medical philosophy can trust himself to generalization from medical observation, as to pathological processes, or as to therapeutical actions. How this has been overlooked, in that mania for theorizing and system making, which has so greatly retarded the progress of our Science and disfigured her fair proportions. Hence the history of the past points us to the doctrine of vitalists or of solidists, or of humoralists; hence have disappeared in succession, to give place to some temporary rival, the chemical and mechanical philosophies of the last century; Haller's doctrine of irritability, Rasori's contra-stimulism; the Brunonian, Cullenian, Broussaian philosophies of days past, and the popular and plausible speculations of the talented Dr. Rush. These so called medical doctrines—doubtless each contained, one or many germs of truth. The inferences of their respective founders doubtless were drawn from personal observations; but in one case a fact was dissociated from other philosophically related facts; or one class of facts was given undue importance, while another was ignored. Does modern observation sustain the doc-

trine, once so widely accepted, as to spasm of the extreme vessels. If, then, men of the highest intellectual endowments seem to have failed in erecting a reliable Medical philosophy, you will do well to be on your guard against all mere systems. If we may adopt a well known and beautiful simile from chemical science "to these theories, we need but apply one drop of logic, and the clear and resplendent solution of the theory becomes at once turbid with self-contradiction, and finally throws down a measurable precipitate of error."

But do not sources of error beset the opposite mode of Medical inquiry; are there no dangers around the modern school of mere Observation? If these men are extremists, we must be on our guard, just because they uphold an extreme view. But secondly, they are liable to error from the seeming security of their plan of mere clinical observation and record. Did ever a physician, young or old, on one single occasion approach a clinical examination with a mind utterly divested of *all* theory? Is philosophical scepticism a condition of mind most conducive to the discovery of scientific truth? Do the perceptive and logical faculties play most healthfully when under the semi-paralysis of doubt? Does Voltaire's sarcastic comparison describe the ideal of Medical research? Must the physician be likened to a man in darkness aiming at an unseen antagonist? To grow wise as therapeutists must we be content to pour medicines of whose operations we *know* little, into a body of whose healthy and morbid actions we know less?

I cannot believe this, if you can, gentlemen. As in moral and social science, as in literature and in art, in history, politics, painting, music, poetry and religion, the highest excellence has been attained by believing, not by doubting minds, resting on knowledge, sustained by faith, and stimulated by a generous professional enthusiasm; so I am compelled to warn you against the glittering but icy elevations to which philosophical scepticism would lift you, where chilling winds of doubt may paralyse, but can never warm into life and activity the germs of philosophic truth. Those alpine summits, attained by the doubters of our science, may indeed glitter from afar, but when approached are silent, chill, and destitute of life and every vital energy. Was it from the artistic scepticism of the mind of the divine painter, that sprung the glories of the Sistine chapel? Did the mind of Michael Angelo doubt, and depreciate, and sneer, until the sublime creations of his own genius compelled him to believe the great canons of his art? Have the great masters of harmony and melody, Handel, Haydn, Beethoven, and Mendelssohn been more remarkable for scepticism and fault-finding, than for enthusiasm and belief in regard to the possibilities of their art? In our own day do you reckon Liebig, Faraday, Bichat, and Cuvier, Louis

and Andral among the great doubters of our time? I assure you, gentlemen, doubt and indifferency, scepticism and latitudinarianism in regard to any class of facts are most intimately associated, in men's conduct at least, if not also in the very constitution of our minds.

You will do well, then, to bear in mind, as Boerhaave has expressed it, there are more false facts than false theories in medicine. Grasp firmly the ascertained verities of pathology and of therapeutics. To grow in medicine you must *know something beforehand as true*; till your own observation has assured you, accept on the testimony of preceding observers the ascertained principles of medical science. Believingly, exhibit certain remedies to control recognized morbid actions; expect your experience to confirm our statements as to their control over disease. If you are disappointed as to the result of your treatment, question your note book in regard to the grounds of your diagnosis—was this free from doubt or positive error; so observing disease and remedy knowingly, believing, honestly, I feel sure you will grow wise in that best of knowledge—our own cautious experience. You know how commonly the human mind recoils from extreme denial and the dissatisfaction of unbelief, into the grossest credulity and superstition. I doubt not, that in men of undoubted moral integrity, taught in the principles of medicine as you have been instructed, men who have subsequently abandoned us for the various medical *isms* and *pathys* of our day, the above facts will serve to indicate the rationale of their abandonment of the views of disease and remedy which we hold to be true. These considerations would serve to explain also why physicians who have once abandoned us, and what we regard as things proved to be true in medicine, so seldom return to their earlier faith.

If in years to come you find a spirit of medical scepticism growing upon you, redouble your diligence to observe cautiously and reason accurately in regard to matters where you find yourselves inclined only to doubt.

That *idola specus* or genius of personal egotism, leading the chemist, microscopist, or morbid anatomist each to over-value his particular mode of research, underrating all other modes of investigation save his own, has retarded medical science, and even brought discredit upon the useful labors of the chemist, microscopist, and morbid anatomist in regard to the value of these *auxilia artis medendi*. Is it true that these are peculiarly *modern* modes of investigation? Do we forget the masterly collections of Morgani, and that his works were suggested by the abundance of the observations collected by a predecessor? Is the microscope new in medicine and physiology, when we remember that the corpuscular researches of Loewenhoeck were among the earliest results of the optical improvements of this instrument? We ought not

to forget the microscopic investigations upon the minute structure of the kidney by Malpighi, made many years ago, (A. D. 1661-1669.) You will not condemn the vivisections of Bernard and Brown Squard as a new mode of discovering the truths of physiology, if you remember the successful experiments of Sir C. Bell, and Legallois, and the earlier vivisections of John Hunter. In every age, since chemical science has been worthy of the name, practical medicine, as well as pharmacy, has acknowledged the assistance to be obtained from chemistry. In the wise use our predecessors made of these aids in theory and in practice, we can find our safest example of the relation they must bear to medicine. So taught, you will neither over-estimate nor undervalue the conclusions of the chemist, microscopist, or anatomist in regard to his own subjects of special observation.

The clinical teacher in medicine or in surgery need not, and ought not to underrate the mere microscopist. The two are and ought to be mutually dependent. The microscopist owes to the surgeon those clinical observations as to general and local symptoms which have led us to combine the term cancer, along with certain local and constitutional phenomena related to a given tumor and ascertained hereditary associations. These data given, the microscopist claims to discover an invariable alteration in the histological elements of the tumor, completing (I think, gentlemen, that word *completing* conveys the whole truth) the surgical definition of that hereditary vice of nutrition, associated with an invariable alteration of tissue, which we term cancer. Now, admit for a moment that some one of the facts of mere clinical observation are wanting in the history of a tumor suspected to be malignant, and how important becomes the evidence of the microscopist as to the presence or absence of changes which he, as a scientific expert, claims to be invariable and constant.

To the chemists who have investigated the matter since 1828, we owe nearly all we know of the pathology and symptomatology of the *Morbus renalis Brightii*.

Though vital processes seem to depend only upon chemical changes, but to be in nature not *mere* chemical reactions, and therefore only partially explainable by chemistry, the physiologist does and should employ chemistry as an instrument, as a means of investigation, not as a means of deduction. Even though analysis of nerve and brain may leave thought, sensation, and motion among the dark things of physiology, the knowledge of the chemical constituents of nerve-substance has shed valuable light both upon the symptomatology of acute and chronic disease in the nervous centres. In medicine, even negative evidence is often highly valuable.

Sir C. Bell tell us: "after my mode of life, no one will accuse me of underrating post mortem examinations. But it is not by

poking in the dead house, the young surgeon will ascertain the causes of diseases." True enough, Sir Charles—nor could he by poking around your own beautiful researches into the nervous system acquire those lessons in therapeutics and surgery, enabling him to appreciate your own valuable clinical instructions. We admit with Sir Charles Bell, that in learning pathology the young student need not expect at the same time, and in the same place, to meet the facts of chemistry or ætiology or symptomatology. But every page of Bell's clear and attractive writings proves how often and with how great benefit to himself and his readers he *poked* in what he terms his "way of life."

Sir Charles' biography no where tells us that men who have distinguished themselves in literature, entertain invariably or generally a life-long fondness for the primer over which the childish tears were shed, as the elements of learning were being mastered from its dull pages.

In some such spirit, we strongly suspect Charles Bell alludes to his *poking* amid earlier pathological explorations, investigations which contributed largely to his own after eminence.

Read carefully, aided by the light of modern theory, the lives and writings of the great physicians of past ages, Hippocrates, Celsus (even physicians have doubted whether Celsus was a physician) Boerhaave, Haller, Morgani, Sydenham, the Hunters, the elder and younger Monro, Fothergill, Scudamore, Cooper, and the two Bells, and you will not feel tempted to decry the labors of the great minds who have observed and reflected and written in the ages preceding our own. How venerable, how rich, how laborously obtained, how vast the regions contributing to its treasures, this Temple of Medical science, erected by the knowledge, and love, and diligence, and intelligence of the good and learned and great of the past. If in this venerable Temple repairs seem necessary, or alterations to adapt it to the uses of a new generation, we must not innovate where it is only necessary to brighten and bring to light some fact over which forgetfulness has crept; if portions of this temple seem unfinished, others are marvelously complete. Will any successor improve the classical writings of Louis and Andral? Would you lay modern coloring upon the exquisite delineations of Morgani or of Sydenham?

Though errors are noticeable in the writings of our predecessors, is modern professional literature unadulterated truth? Were not the errors of our classical writers often chargeable upon an imperfect anatomy or chemistry, or physiology; and are these sciences perfect in our day? Will no successor (should our own contributions to medicine outlive our brief lives) unsay and disprove some things we have written, and teach students years hence to come, that much we now deem true to-day, must be otherwise considered by that generation which shall come after us?

The traveller who enters the indescribably perfect, though unfinished cathedral at Cologne, learns a never to be forgotten lesson of humility and faith. So gentlemen would I have you enter the venerable and magnificent temple of Medical truth, reared by the labor of many centuries, unfinished though it be; these same lessons of humility and of faith well befit you as you stand before its august portals; succeeding generations may find it, as well as Cologne's majestic gothic masonry, incomplete, unfinished in some of its details: it is our business, if we bring but one well polished stone, to do our share to embellish and complete that which has been advancing toward completion during so many ages.

In our day genuine Medical philosophy bends to no Procrustean system, belongs to no sect, has no exclusive dogmas. As in philosophy, the best minds of our day advocate a rational eclecticism in intellectual and moral reasoning, so in Medicine, Paget, Latham, Trousseau, Simon, and Wood labor to establish truth on the basis of sound, accurate, impartial observation. Knew we nought else in Medicine, to adopt the rude language of Cotton Mather, we have learned at least to distinguish things knowable from things impossible to be found out, a no mean acquisition: we can put our finger upon the dividing line where our knowledge ends and our ignorance begins, in many portions of Medical science.

Though the microscope is wondrously improved in its optical construction, the histologist acknowledges a *terra incognita* in his domain, notwithstanding the tact and patience of hundreds of observers.

Perfect as is analytical chemistry and the theory of the science, the physiologist admits he cannot give a complete history of functional agencies. Even the anatomist, aided by these and by the embryologist and comparative inquirer, lays aside the scalpel with a sigh, when he examines the thymus and prostate glands, the supra renal capsules, the sympathetic nerve, or the intricate tracery of ascending, transverse and longitudinal fibres of the Brain. With this view of the present position of our science and of our art, we can now profitably take a rapid glance in retrospect over our occupations during the past winter, having thus defined Medical science, the sources of its improvement, its modes of legitimate investigation, and the relative importance of its several auxiliary and collateral sciences.

With these views your attention has been directed to anatomy, general, demonstrative and microscopic; to the physiological relations of chemistry and to special physiology; these, with Hygiène, include the doctrine of man in health. *Secondly*. The pathologist has laid before you pathology, both gross and microscopic, also, the chemistry of diseased actions. *Thirdly*. Chemistry

and its applications to *Materia Medica* have been studied, while toxicology and jurisprudence are only special applications of the foregoing. Lastly. Applied medicine and surgery, general and its modifications by reason of sex or age, have completed the curriculum of your studies.

In our day I believe these branches can neither be taught nor studied singly and dissociated from their mutual inter-dependence; thus you have found your anatomical studies culminating in your own readings upon Physiology—physiology drawing upon pathological data, the morbid anatomist referring to the microscope and test tube, and the teacher of practice gleaning from the treasures of each. As *elementa*, chemistry, anatomy and physiology, seem to have exacted most from your time and attention, and so your power to pursue any one topic has increased in exact proportion to your growing acquaintance with each singly. In listening to the three professors of applied Medicine, you have understood your teachers just in proportion to your knowledge of anatomy, chemistry, *materia medica* and therapeutics. Your own dissections must be and are the best lessons in practical operative surgery. The mere witnessing of important or unimportant operative display, cannot convey to learners, though it may exhibit to them great manual dexterity. Personal dissection, and patient mastery of the principles of surgery, are really more valuable to you now than the most imposing display of professional skill. Liebig, in his recent letters, tells us, as the results of twenty-five years of experience as a professional teacher, that those pupils who have first mastered the principles, soonest learn the manual art, and acquire skill in the mere routine of application. He states further his conviction, that it is both unwise and unphilosophical to attempt to teach both the theory and the practice at the same time and place.

If *diagnosis and treatment* were mere routine we would hesitate to avow our own accordance with this celebrated teacher, and would say, teach the theory and immediately show its application; let science and art go hand in hand. But believing as we do that the practice of Medicine demands a constant exercise of the logical faculty, and a facility in reasoning upon Medical data, and that this very facility is only acquired slowly after the mind has grown somewhat conversant with Medical reasonings, we are compelled to agree with Liebig, howsoever contrary to this may be the modern fashion and popular theory of Medical education. If this be a just view, among the most important lectures you have listened to during the past winter have been those where you have had the properties, uses, and *modus operandi* of drugs discussed as a special subject of study. If quinine, arsenic, sulphur and mercury are the only specifics known, these are the very agents whose *modus operandi* is least understood. Even if

hereafter your first essays in applying remedies should be solely empirical, the therapeutical teacher is compelled to treat his subject rationally; assuming certain postulates and definitions, whose truth your clinical experience will hereafter show to be demonstrable. If the therapist can not tell you the action of quinine in ague, neither can the professor of practice explain to you how miasm produces fever, nor the anatomist how nerve force induces muscular motion. The science, then, rests in what we term general laws, or, as an eminent teacher has said, "all science rests on facts, and in the *relations* of these facts." Now, these relations are deducible only by logical reasonings, and are appreciable only by the judgment.

Fortunately, in practice, therapeutics, and in pathology, these laws are few in number, and capable of brief and simple announcement in language. Possessing the law as a clue or guiding thread, you need not become lost in the labyrinth of abundant clinical observation, or in the otherwise puzzling succession of symptoms. I greatly fear too early clinical observation subjects the young student to the risk, if not to the certainty, of becoming a mere blind routinist, and has tended to retard rather than advance the progress of medical science. If this be not so, why is our American journal literature rather characterized by an unprofitable empiricism, than by the profound and philosophic mode of handling so noticeable in the French, German and British periodicals.

I do not deny that American mind is eminently practical in its tendencies, but the fact can neither be ignored nor denied, that in pathology, physiology, and the scientific portions of medicine, American physicians have made but few contributions to medical literature. Operative and mechanical surgery and pharmacy are well represented by American writers; but excepting the masterly Encyclopedia of Dr. Wood, nearly all the text books used in our medical schools are of British origin, or are translations from French and German writers.

In part, at least, I am inclined to explain these facts, by referring to another undeniable fact, that in very many American schools of medicine, the tryo is conducted to the bed side and bidden to observe disease too soon, namely, before he has been thoroughly taught the principles of practical medicine and surgery, the philosophy belonging to therapeutics, or the demonstrable facts of anatomy and pathology—hence, in some cases, it is inevitable that the young student shall become only an unreasoning imitator of a routine he cannot understand, a routine practitioner by the bed side, and a routine searcher for precedents in the study. In such a mode of study memory is severely taxed, and often gains strength under the unnatural demands made upon this faculty. But the judgment and invention lay

dormant, and the best powers of the mind thus continue unimproved. Such, then, gentlemen, is a rapid and necessarily brief summary of the instruction you have received, and of the reasons which have led to its adoption. Though *all* science is based upon minute, extensive and accurate knowledge of details, this knowledge of details is not science. Science consists in a knowledge of the facts, and of the relations of these facts; we have labored therefore chiefly to impart to you the principles of the several branches in which we have sought to instruct you, leaving to your own private labor the acquisition of details. Haller reckoned nineteen years of study needful to make a man an anatomist; if this be true of one branch only of Medical study, how many sessions (think you) would be needed if we were to attempt to instruct you in minute details. I take it, gentlemen, your aim is neither to be anatomists nor chemists alone, but physicians, and that you pursue the *elementa doctrina medicinæ* as *means* to an end, not as an ultimate aim. In your clinical observations hereafter you will learn man's very limited power to control disease by the use of drugs, or by the knife. You will recognize the *vis medicatrix naturæ*, both in your Medical and Surgical observations. The value of rest, abstinence, freedom from pain and mental excitement you will gradually learn to appreciate. You will not always rely most upon drugs in your treatment even of acute disease, but will learn little by little the value of attention to hygiene. You will see how important an element is *time* in the treatment of disease. To quote the wise observation of Broussais, you will appreciate the force of that vast demonstration afforded by the infinitesimal medication, as to the wonderful power of nature, if only let alone, to cure many acute as well as chronic maladies; and you will even, in this sense, incline to reckon Hannemann and his disciples as promoters of Medical science. Even that ism, the offspring of the speculative mysticism of Germany, had a germ both of practical and scientific truth within; look not then too disparagingly upon either the theories or practical results of the infinitesimal medication,

“which, like the toad, ugly and venomous,”

with its nux, and rhus, and arsenicum, dilutum—“wears yet a precious jewel in its head.” To the experience of this school chiefly we owe it, that in our day a whole phalanx of physicians have devoted themselves to the effects of drugs administered singly, in very small doses and in soluble forms; we can but agree with Dr. Forbes, that their clinical observations have demonstrated most convincingly the half forgotten truth, that *nature* possesses an indefinite power of self-recuperation, when quiet, diet, ventilation and the absence of perturbing drugs are secured for the sick; if you are inclined to *doubt* the canon of Broussais, viz: chronic maladies must be treated chronically, re-examine

the clinical reports of the Hahnemannian school, and you will find further ground to accept this broad conclusion of the author of the celebrated Treatise upon Acute and Chronic Inflammations.

These reflections upon the value of the experience of an opposing and rival Medical philosophy and practice, have not been uttered in your hearing in any spirit of therapeutic scepticism, but to bring distinctly before your minds what seems to be the real relation of drugs to diseases. The surgeon does not heal the torn integument, or reunite the fractured bone. These results are brought about by vital action, by molecular interstitial nutrition. We are only nature's handmaids here. Physiology has taught us the *conditions* necessary for healthy nutrition and reparative action, and we endeavor by medicines and regimen to place our patient in these known conditions, and then leave the cure to nature. Surgical injuries, typhoid and exanthematous fevers, phthisis and cancer, will force these truths home upon you, gentlemen, and you will not be able to evade their force.

Be not discouraged by the seeming multiplicity of details in both our science and in our art.

Nulla dies sine lineâ, bought immortality to an ancient artist. Let your progress be real, be it ever so slow. If God grants you medium length of days, you have years yet in which to emulate the learning of the Pagets and Trousseaus, and Woods and Grosses of our own times. Do not endeavor then to grasp too much at once. The sculptor, whose patient labor developed from the rough marble the beautiful Medicean Venus, the embodiment of female physical perfectness and grace, began at first to bring the rough block, little by little, to some resemblance of the mere human form; it was only day by day the yielding marble assumed its proportions of exquisite beauty, to remain among men for all ages the beau ideal of classic female loveliness. So, too, the painter, who transferred to the canvass the representations of the great, the good, the heroic and the true; so that now the creations of the painter's genius continue to speak to and ennoble the hearts of after generations, began at first with the mere outline of his immortal thoughts.

There was a day, gentlemen, when the sublimities of Michael Angelo's great works existed visible alone to the mind's eye of this grand artist, or merely as suggestive outlines sketched upon perishable paper.

Time, labor, thought, criticism, patience, knowledge, skill, produced the glories and sublimities of the Last Judgment, and intrusted the wondrous picture to the keeping of a whole nation, as one of the imperishable glories of classic Italy.

There was a day when Owen conned with difficulty the simplest anatomy of a vertebra; before in after years he gave the world his Homologies of the Human Skeleton; Liebig, too, once

pondered with doubt and difficulty the elementary lessons of a science, which in after days his genius has almost reconstructed.

It seems the possible conquests of patient labor in the domain of learning, are only circumscribed by health and length of days.

But, gentlemen, the hurrying minutes warn me to hasten to my conclusion. The place and the circumstances of this commencement evening are suggestive to you and to me. The relation which our School of Medicine bears to this venerable seat of polite learning, suggests that your aim must be to be not only physicians, *but also* men capable of sustaining those social relations possible only to good, learned, polished men. I seem to see, in these assembled professors, whose lives are devoted to polite and useful learning, a tacit admission of the truth, that the student of Medicine requires the best possible academic instruction in literature, physical, and metaphysical science. If the lawyer and divine may pursue polite literature as a means of professional success, you may love and cultivate letters as an end. Your own minds will demand this different field of intellectual activity. How gracefully does the professor (of anatomy and physiology) in the Atlantic Monthly enter the lists against Addison and Steel, and frame sentences which fairly sparkle in their Addisonian purity and liquidity. Has any modern historian of the progress of civilization written at once more profoundly or more charmingly than Dr. Draper in his recent history?

It is with pleasure and with pride we point you to these (and did time permit others might be summoned in review) instances of the successful pursuit of letters by men in our profession in our own day. These instances seem to prove how academic studies successfully pursued, afford the surest ground upon which to build hopes of future distinction.

The classic tongues of Rome and of Greece, the rich vocabularies of modern Europe, the severe but profitable exercises of mathematical and metaphysical study—possess of these all that your time and means will allow, and you will appreciate more and more the intimate connexion between academic study and professional education. It is the study of the Humanities (a profound distinction made by the deep thinkers of a previous age) which will guard you greatly against the materialistic tendencies of Medical study. The old proverb says, *Ubi medici tres, ibi athei duo*.

If the tendency to unbelief was so great formerly, at a time when physical science was so much less perfect than it has now become, be on your guard, gentlemen, lest you lose the influence of the teachings, and lapse into forgetfulness of the lessons, imparted to you in halls like these, devoted to Literature, Philosophy, and Religion. Forwarning you, we trust you will be forearmed. If your intimate admission to the most private recesses

of men's weaknesses and foibles shall incline you to doubt human virtue and human heroism, turn to history, and philosophy, and religion, and you will find man has been and can be noble, and wise, and good. If anatomy or physiology seem to tend toward a bare materialism, Cousin and Sir Wm. Hamilton, Schlegel, and the hosts of moral writers of the last century will show you what strong counter-evidence can be brought in favor of an immaterial principle, drawn from a consideration of the human mind and the history of the race.

If your daily admission to chambers of human suffering; if the spectacle of human dissolution; if the fearful mental anguish of one without the hopes afforded by Religion, or the sublime composure and peaceful resignation of the good man as he approaches the last hour; if the pious resignation of grief-stricken survivors, calmed by a better than mere human philosophy; if the decencies of Christian burial, and the bright hopes of Christian faith, do not demonstrate to you how necessary is religion to our nature as men, and how wonderfully the religion we reverence is adapted to the constitution of our minds and hearts, I shall despair, gentlemen, of the power of your reasoning faculties to feel the force of the most cumulative moral evidence.

As under your notice, physician after physician is called away from the sphere of his useful labors, and you observe new and younger men advancing to fill the thinning ranks, and you feel yourselves, gentlemen, being carried by the moving multitude onward toward the foremost ranks of professional duty, bear in mind, gentlemen, the parting advice of the aged Boorhaave to the young Linneus, then like yourselves advancing in professional usefulness and fame.

His biographer tells us, Linneus had bidden the dying philosopher and sage a sorrowful adieu, at the same time kissing his shrunken hand in token of respect; Boorhaave put the hand of young Linneus to his aged lips in return, and addressed him in these impressive words: "I have lived my time, my dear Linneus, and my days are at an end. I have done every thing that was in my power. May God protect thee, with whom the same duty to be diligent remains! What the world required of me, it has got, but of thee, young Linneus, it expects much more."

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VALEDICTORY,

DELIVERED AT THE COMMENCEMENT

OF THE

MEDICAL DEPARTMENT

OF

GEORGETOWN COLLEGE,

BY

MONTGOMERY JOHNS, M. D.,

Professor of Anatomy,

MARCH 3, 1862.

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